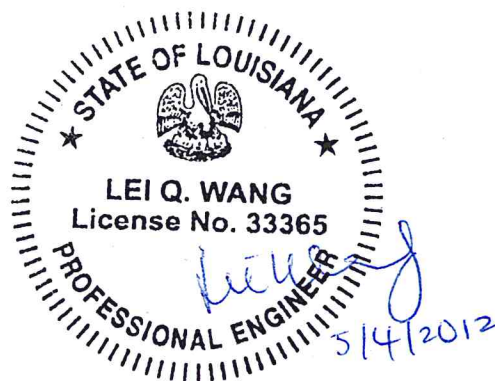


Louisiana
Department of Transportation
And
Development

Traffic Control Standard
Number 1A

Signal Head Mast Arm Bracket

Revised May 4, 2012



MAST ARM BRACKET

6 ½" Mounting Arm Top and Bottom
(SAP #10956, Stock #14-04-6207)

The device described herein is for mounting vehicle traffic signals to rigid cylindrical structures. Design of the device shall conform to the latest ASSHTO standards for wind loading and ITE standards for attaching to the signal. The AASHTO and ITE standards will be followed except where exceptions are taken within this standard.

GENERAL DESIGN

This traffic signal mounting device shall be a multi piece assembly providing adjustable components to mount the signal in a horizontal or vertical position relative to the roadway surface. The device shall mount to any type of structure and provide complete adjustment of the mounting hardware as shown in the drawing to align the traffic signal toward the driver. Adjustment and installation shall be made using simple hand tools. Modifying, milling, drilling, or threading of the supporting structure shall not be required. The device shall include the signal attachment arms, support tube, swivel plate, cable stays, and main mount. All cast parts shall be from aluminum or brass and fasteners shall be of stainless steel.

MAIN MOUNT

The device shall have a uniformly curved or v-shaped cast main mounting surface. The width of the mount shall be approximately 9-1/2" long and 4-1/2" wide. The mounting surface shall rest against the mast arm and held in place by a cable(s) attached to the mount and wrapped around the structure. The intent of this design is to provide stable positioning of the mount against various shaped structures (such as multi sided and round). Any mount that does not provide stable positioning on any structure will be unacceptable.

Any design that allows the nuts on the cable to bind will be unacceptable.

The back of the main mount, shall be designed for attaching a swiveling plate. The swiveling plate shall be secured to the mount using bolt(s) and washer(s) through slotted holes in the plate and into threaded bosses in the mount. Two sets of bosses shall be provided in the mount located ninety degrees (90°) apart. The swivel plate and main mount shall be designed to provide an alignment mechanism positioning the plate correctly on the mount, an axis for rotating the plate on the mount and align the slotted holes with the threaded bosses.

A cable locking plate shall be provided on both sides of the mount that will secure the cable to the mount. Nuts and washers installed on the cable stud shall provide a means to

tighten the cable around the structure. During installation of the mount the locking plate shall allow the cable to be hand tightened against the structure by permitting the free end to be pulled through the plate. Once the locking plate is tightened against the cable, the cable is then tightened against the structure using nuts and washers. The design of the locking plate shall use bolt(s), attaching the locking plate to the mount. The nuts and washers on the threaded end of the cable assembly shall be used to tighten the clamp assembly to the arm.

SWIVEL PLATE

The swivel plate shall be cast in one piece providing a matched surface to the main mount, slotted holes for adjustment and attachment, and two tube clamps. The diameter of the plate shall be approximately 5".

An alignment boss shall be provided on the plate that will fit into an alignment hole, approximately 2" diameter, in the main mount. Rotation of the swivel plate shall be unrestricted for three hundred and sixty degrees (360°) without the bolts attaching the plate to the main mount installed.

The slots shall allow the swivel plate to rotate a minimum of fifty-four degrees (54°) with the bolts installed through the slots in the threaded bosses on the main mount.

The clamp(s) shall be designed to compress around an aluminum tube described below. The clamp shall have boss(es) and bolts securing the removable part of the clamp to the swivel plate. The compression onto the tube shall secure the tube preventing it from movement in any direction with the manufacturer specified torque on the bolts.

ALUMINUM TUBE

The aluminum tube shall be manufactured from aluminum alloy 6061-T6 material and be a minimum of schedule 40 thickness. The length shall be 54" – 60", 3/4" wire entrance slot. The outside of the tube shall be smooth for positioning within the clamps on the swivel plate throughout the length of the tube.

SIGNAL MOUNTING ARM, TOP AND BOTTOM

Each mounting arm shall be designed to slip fit onto the aluminum tube. Each arm shall be secured to the tube using set screw(s).

The bottom arm shall be designed with a stop for the tube to be positioned against when the arm is secured to the tube. A wireway shall be provided from the interior of the bottom arm into the tube. A serrated fitting shall be provided to fit against the mounting point of the vehicle signal and secured to the signal using bolts(s), or tri-stud, with

washer device. A black ABS plastic cover shall be provided covering the wireway within the bottom arm and secured to the arm with screws.

The top arm shall be designed that will allow the arm to be positioned at any point on the tube. The arm shall be cast in one piece. A serrated fitting shall be provided to fit against the mounting point of the vehicle signal and secured to the signal using bolts(s), or tri-stud, with a washer device.

CABLE ASSEMBLIES

One or two cables will be allowed to attach main mount to the structure.

The cable(s) shall be used to secure the main mount to the supporting structure. Standard cable lengths are shown on the drawing shall be provided. Special cable length identified on the plans or orders shall be provided in place of the standard lengths.

If using one cable: The cables shall be 3/16" diameter min. stainless steel aircraft cable with a securely attached threaded stud on both ends with two hex., locking nut, flat washer, provided.

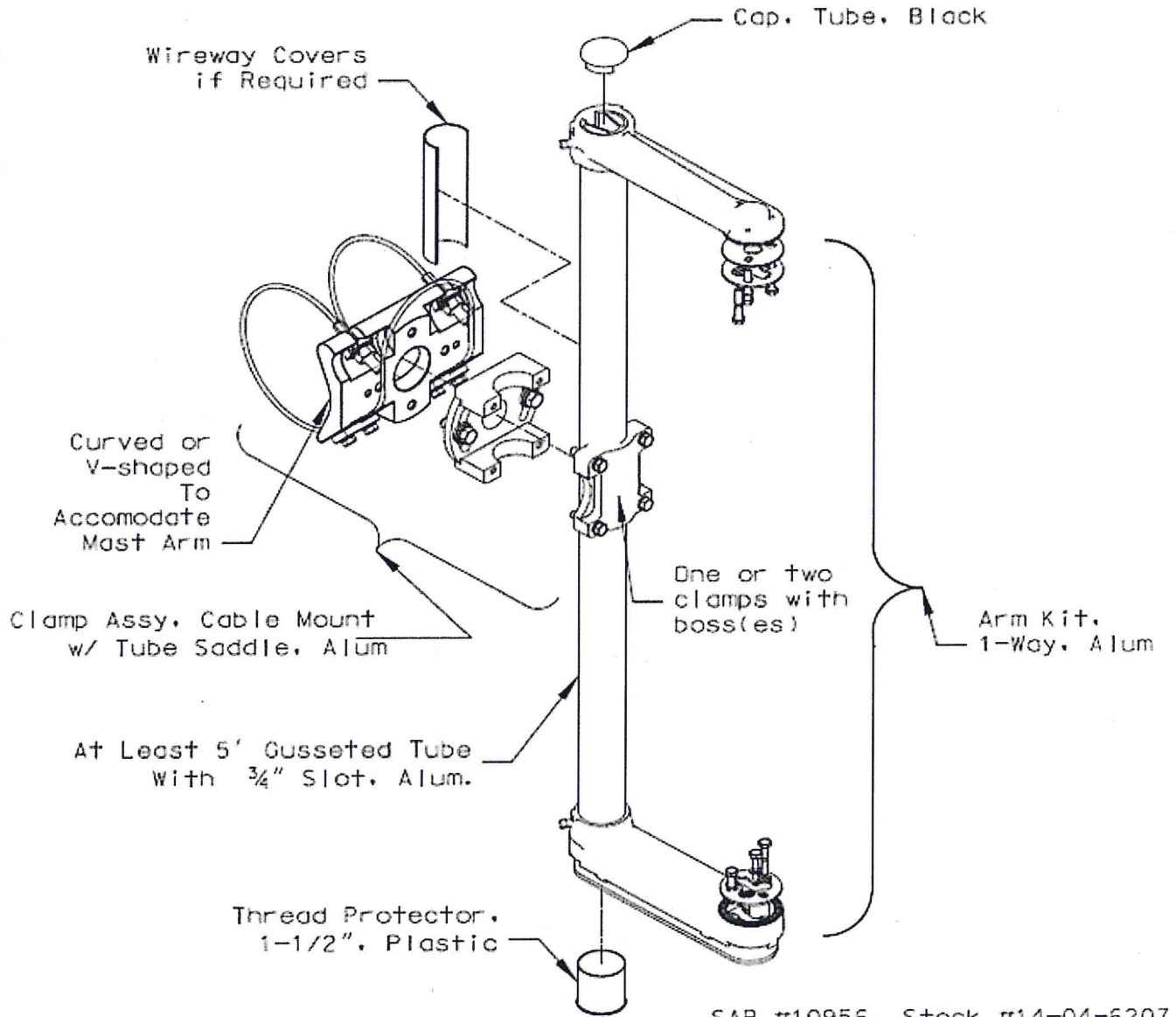
If using two cables: The cables shall be 3/16" min. diameter stainless steel aircraft cable with a securely attached threaded stud on one ends with two hex., locking nut, flat washer, provided. The other end must be fused to prevent fraying.

CAST MATERIAL

Aluminum shall be used for all cast parts. The material shall be 713 alloy meeting ASTM B179 standards. When specified on order or in plans the cast parts shall be copper alloy no. C83600, (formerly know as leaded red brass, composition bronze, 85-5-5-5).

PACKAGING

All parts, components and hardware for each assembly other than the tube shall be packaged in one box. Under no circumstances shall the vendor mix parts from multiple complete assemblies together.



CABLE FOR CLAMP ASSEMBLY ONE (1) REQUIRED
LENGTH 96" INCLUDING THREADED CONNECTORS S.S. PERMANENTLY ATTACHED.
A STAINLESS STEEL WASHER SHALL ALSO BE PROVIDED FOR EACH
CABLE.



CABLE FOR CLAMP ASSEMBLY TWO (2) REQUIRED
LENGTH 50" INCLUDING THREADED CONNECTOR S.S. PERMANENTLY ATTACHED.
THE FREE END OF THE CABLE SHALL BE CRIMPED OR WELDED TO PREVENT
FRAYING. A STAINLESS STEEL WASHER SHALL ALSO BE PROVIDED FOR EACH
CABLE.

FIGURE 1 SIGNAL HEAD MAST ARM BRACKET